MONTHLY WEATHER REVIEW,

SEPTEMBER, 1878.

WAR DEPARTMENT,

Office of the Chief Signal Officer,

DIVISION OF

TELEGRAMS AND REPORTS FOR THE BENEFIT OF COMMERCE AND AGRICULTURE.

INTRODUCTION.

In compiling the present REVIEW the following data, received up to September 14th, have been made use of, viz: the regular tri-daily weather charts, containing the data of simultaneous observations taken at 118 Signal Service stations and 12 Canadian stations, as telegraphed to this office; monthly journals and means, 141 and 121 respectively, from the former, and monthly means from 14 of the latter; reports from 18 special Sunset stations; 222 monthly registers from Voluntary Observers; 32 monthly registers from United States Army Post Surgeons; Marine Records; International Simultaneous Observations; monthly reports of the Weather Services of the States of Iowa and Missouri; reliable newspaper extracts; special reports.

BAROMETRIC PRESSURE.

Upon chart No. II is shown by the isobaric lines the general distribution of the atmospheric pressure, reduced to sea-level, for the month. Compared with the means for September of previous years, the pressure for the present month is generally higher east of the Mississippi river, and especially so in the Middle and Eastern States. The pressure is about normal in the Northwest and on the Pacific coast.

The Local Barometric Ranges, for the month, as reduced to sea level, have been largest from Kansas and Nebraska to the Lake region, and along a narrow belt of country, extending from Lake Ontario to Florida, in the course of storm area No. IV; taken by districts they vary as follows:—New England, 0.69 at Wood's Hole to 0.99 at Burlington, on summit of Mount Washington, 0.71; Middle Atlantic States, 0.42 at Norfolk to 0.94 at Washington; South Atlantic States, 0.59 at Cape Lookout to 1.02 at Jacksonville; Gulf States, 0.32 at Galveston to 0.47 at Mobile; Ohio valley and Tennessee, 0.41 at Nashville to 1.03 at Morgantown; Lower Lake region, 0.87 at Cleveland to 1.19 at Rochester; Upper Lake region, 0.93 at Chicago to 1.26 at Alpena; Upper Mississippi valley, 0.59 at St. Louis to 1.17 at St. Paul; Red River of the North valley, 1.05 at Pembina to 1.23 at Breckenridge; Missouri valley, 0.95 at Bismarck to 1.33 at Yankton; Plains of Nebraska and Kansas, 1.28 at Dodge City and 1.51 at North Platte; Rocky Mountain stations, 0.52 at Santa Fe to 0.86 at Denver; Utah, 0.66 at Salt Lake City; Idaho, 0.71 at Boise City; Nevada, 0.54 at Winnemucca and 0.57 at Pioche; California, 0.22 at Los Angeles to 0.37 at Red Bluff.

Areas of High Barometer.—Six have been sufficiently marked to merit a short description. They present some interesting features. Nos. I, III and VI entered the United States on the Pacific coast, moved in an easterly path over the Rocky Mountains, and thence to the Lake region, in all instances accompanied by general rain as soon as the colder northerly winds, due to the high pressure, began to under-run the warm southerly winds that had previously prevailed. Prior to these rains the dew-point in these regions had been high, but the relative humidity had been quite low. The greatest daily ranges in temperature occurred in advance of the passage of these high areas. High areas IV and V appear to have been due to the rise of the barometer in rear of low areas III and VIII, respectively. Developing in the Southwest they moved, with increasing pressure, in a northeasterly direction over Tennessee, Ohio valley and Lower Lake region, and thence to the New England and Middle Atlantic coast, and, at the approach of low areas from the west, were transferred, with diminishing pressure, to the Southern coast.

No. I.—2d, the barometer rose rapidly on the north Pacific coast in rear of low area No. III. 3d, the high pressure extended over Oregon, Nevada and Utah, accompanied by northwest winds, considerable fall in temperature and general but light rains. 4th and 5th, the highest barometer was transferred to the plateau lying north of the Platte river; in this region rain fell at every station after the shifting of the warm southerly winds to colder northerly.